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said plurality of sensor elements is made to respond differently to a chemical species.

23. A method of making a temperature-controlled sensor element according to claim 17, further comprising forming said conductive heat distribution plate from an electrically conductive material.

24. A method of detecting components of a fluid mixture which comprises:

providing a substrate having a plurality of micro-hotplates, wherein each of said plurality of micro-hotplates is provided with a conductive heat distribution plate and can be individually temperature controlled;

providing a film of a chemical active material on each of said plurality of micro-hotplates;

selectively heating said plurality of micro-hotplates while exposing said chemical active material to a fluid mixture; and

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measuring response of the chemical active material to said fluid mixture and determining therefrom the composition of said fluid mixture.

25. A method of detecting components of a fluid mixture according to claim 21, further comprising forming said conductive heat distribution plate from an electrically conductive material.

26. A method of detecting components of a fluid mixture according to claim 21, wherein said selectively heating comprises subjecting selective micro-hotplates to temperature variations.

27. A method of detecting components of a fluid mixture according to claim 21, further comprising regenerating the chemical active material after exposure by selectively heating said plurality of micro-hotplates above a regeneration temperature.

28. A method of detecting components of a fluid mixture according to claim 21, further comprising providing a protective layer over said chemical active material and selectively heating said plurality of micro-hotplates to burn off said protective layer and expose said chemical active material to said fluid mixture.

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